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U.S. DEPARTMENT OF AGRICULTURE • AGRICULTURAL MARKETING SERVICE

USDA GRADES for Slaughter Swine and Feeder Pigs

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FOREWORD

Standardization makes our way of life possible.

It began shortly before the Civil War when the manufacture of rifles with interchangeable parts ushered in mass production. Today, manufactured products are turned out by the millions, each exactly like the other down to the thousandth of an inch.

Farm products, however, cannot be "manufactured" to close tolerances. To fit into an age of mass production and mass marketing, they must be sorted *after* they're produced. The sorting process is what we call grading.

But grading, to be useful in the kind of national market we have today, must be done on the basis of nationally uniform, nationally understood standards.

U.S. Choice, U.S. No. 1—these and other grade names—have become the language of trade in farm products across our country. The U.S. standards are the "dictionary" that gives definition and meaning to that language. They define the attributes of a product that determine its desirability and value. These are factors such as yield of edible product and eating quality (tenderness, juiciness, and flavor).

And for each product, the standards provide a means of classifying its entire range of quality. Because some products are naturally more variable than others, it's necessary to have more grades for them than for others.

The standards are prepared by U.S. Department of Agriculture technicians in terms that, as nearly as possible, can be easily understood and uniformly applied.

Standards are essential to the official Federal and Federal-State grading and market news services, but they are also the guidelines in virtually all buying and selling. Without this universally understood language of official grade standards, trade by description across this Nation would be difficult and much less precise.

INTRODUCTION

If you are a producer who would like to get a higher price for your better hogs—

If you are a meat packer who would like to be able to buy hogs on the basis of their true worth—and get just the kind that suits your needs—

If you are a retailer who would like to be able to buy pork from your suppliers with more precision—and sell more to your customers—

If you are a consumer who would like to get meatier pork cuts—

Then U.S. Department of Agriculture grades for slaughter swine and feeder pigs can help you.

Grades for slaughter swine and feeder pigs, like those for other farm products, provide a language for trading understood across the nation.

Standards for grades of slaughter swine and feeder pigs—again, like those for other farm products—are based on the attributes of the product that determine its value and utility. In terms of the pork they produce, that means the quality of the lean meat and the yield of the four lean cuts—hams, loins, picnics, and Boston butts.

With respect to the quality of the lean, the slaughter swine standards provide two groupings—acceptable and unacceptable. Slaughter swine that will produce carcasses with unacceptable lean quality are graded U.S. Utility. Slaughter hogs that are expected to have acceptable quality of lean are further grouped—by expected yield of four lean cuts—as U.S. No. 1, 2, 3, or 4. The factors affecting the yields of cuts—and, therefore, defined in the standards as the basis for the numerical grades—are the hog's fatness and its muscling.

A U.S. No. 1 slaughter hog is expected to yield more than 53 percent of its carcass weight in the four major lean cuts. Obviously, this is a more valuable animal than a U.S. No. 2, which will yield between 50 and 53 percent, a No. 3 which will yield 47 to 50 percent, or a No. 4 which will yield less than 47 percent.

Some pork carcasses and some live hogs are worth much more than others. For example, based on July 1970 carlot prices for fresh pork cuts, the gross cutout value differences between adjacent grades of 150-pound pork carcasses averaged nearly $1.25 per hundredweight. This reduces to 85–95 cents per hundredweight alive. Thus, there is good reason why the producer who raises leaner, meatier hogs should get more for them. Often, he gets paid only part of the difference in real value. Increased marketing of swine on merit should result in price differentials more nearly equal to true value differences.

Actually, the grades—and their greater use by the industry—can benefit all parts of the industry.

- For the producer—They provide a market identification through which producers can be rewarded, in dollars, for leaner, meatier swine. Also, they help him choose breeding stock and plan and operate the most efficient production, feeding, and marketing program.
- For the packer—They will help him more precisely determine value differences in the market hogs he buys and the pork he sells.

- For the retailer and consumer—To the extent that differences in price match differences in real value among the grades, this will encourage the increased production of meat-type hogs. And this, in turn, will provide retailers a more consistent supply of the kind of pork most preferred by consumers—tender, juicy, and flavorful and with a high ratio of lean to fat and bone.

According to a recent USDA report,[1] in the seven years from 1961 to 1968, substantial progress was made in producing hogs with less fat and more lean. This occurred despite the fact that during this period only minor price differentials were paid for hogs of different grades. However, the grades provided an educational tool to measure the progress producers have made in supplying consumers with the leaner, meatier pork they desire. In this report, it is estimated that in 1968 the grade distribution of barrows and gilts slaughtered in the U.S. was:

Grade	Percent
U.S. No. 1	8
U.S. No. 2	42
U.S. No. 3	36
U.S. No. 4	12
U.S. Utility	2

To assure that the U.S. grades for swine and pork are of maximum benefit to the industry, the grades for slaughter hogs are correlated directly with the grades for pork carcasses. Similarly, the grades for feeder pigs also are directly correlated with the grades for slaughter hogs. Thus, a U.S. No. 1 feeder pig, for example, can develop into a U.S. No. 1 slaughter hog, which in turn should produce a U.S. No. 1 carcass.

The feeder pig grades are based on two general factors—logical slaughter potential and thriftiness. All thrifty feeder pigs—those that will gain weight rapidly and efficiently—are grouped according to their logical slaughter potential into either the U.S. No. 1, 2, 3, or 4 grade. Unthrifty feeder pigs are labeled U.S. Utility or U.S. Cull depending on their degree of unthriftiness.

Since their development, the feeder pig grades have become an important guideline in segregating pigs at feeder pig sales. These sales have been increasing in number and size during the past few years and are becoming an important part of the marketing segment of the swine industry.

The official grade standards for pork carcasses are contained in a separate publication which may be obtained from the Livestock Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington, D.C. 20250.

[1] "Improvements in Grades of Hogs Slaughtered From 1960–61 to 1967–68," Marketing Research Report No. 849, Economic Research Service, U.S. Department of Agriculture.

DEVELOPMENT OF THE STANDARDS
Slaughter Barrows and Gilts

A system of classifying and grading market hogs was formulated by the United States Department of Agriculture in 1918 for use in the livestock market reporting service. The system was developed with the cooperation and assistance of many interested agencies and represented the most generally accepted market groupings of the time. After meetings with producers, animal husbandmen, market representatives, and slaughterers in 1928 and 1929, revisions were made, consistent with changes in production and marketing conditions, and tentative standards were issued in 1930. Further revisions were incorporated into the tentative standards in 1940 when they were published in Circular No. 569.

The United States Department of Agriculture proposed new standards for grades of slaughter barrows and gilts in 1949. Field testing, discussion, and demonstration of the standards resulted in slight revisions prior to adoption as the official United States standards for grades of slaughter barrows and gilts, effective September 12, 1952.

The official standards were amended in July 1955 by changing the grade designations Choice No. 1, Choice No. 2, and Choice No. 3 to U.S. No. 1, U.S. No. 2, and U.S. No. 3, respectively. In addition, the degree of finish or fatness was reduced for each grade and the descriptive specifications were reworded slightly to reflect the reduced degrees of finish and to facilitate more uniform interpretation of the standards.

On July 1, 1968, the official standards were revised to coordinate them with the revised pork carcass standards. The minimum backfat thickness requirement for the U.S. No. 1 grade was eliminated and a new U.S. No. 1 grade was established to properly identify the superior pork carcasses then being produced. The former No. 1, No. 2, and No. 3 grades were renamed No. 2, No. 3, and No. 4 respectively. The former Medium and Cull grades were combined and renamed U.S. Utility. Also, the maximum allowable adjustment for variations-from-normal fat distribution and muscling was changed from one-half to one full grade to more adequately reflect the effect of these factors on yields of cuts.

In addition, the text of the "Application of Standards" section was reworded to more clearly define the grade-determining factors and clarify their use in determining the grade.

Feeder Pigs

In 1940, tentative standards for grades of feeder pigs were developed and published by the Department of Agriculture in Circular No. 569, "Market Classes and Grades of Swine."

The tentative standards served as the basis for Federal and Federal-State livestock market news reports on feeder pigs.

Official standards for grades of feeder pigs were proposed by the United States Department of Agriculture in 1965. Slight revisions were made in the proposed standards before they were adopted as the Official United States Standards for Grades of Feeder Pigs, effective January 1, 1966.

On April 1, 1969, the official standards were revised to coordinate them with the pork carcass and slaughter swine standards that were revised in 1968. In this revision a new No. 1 grade was established to identify the superior feeder pigs then being produced. The former No. 1, No. 2, and No. 3 grades were renamed No. 2, No. 3, and No. 4 respectively. The Medium grade was renamed U.S. Utility, and the application of standards section was revised to more clearly define the grade-determining factors and clarify their use in determining the grades.

BASIS FOR STANDARDS

The official standards for slaughter barrows and gilts and feeder pigs developed by the U.S. Department of Agriculture provide for segregation first according to use—slaughter and feeder—then as to class, which is determined by sex condition, and then as to grade, which is determined by the apparent relative excellence and desirability of the animal for its particular use.

SLAUGHTER SWINE AND FEEDER PIG CLASSES

The classes of slaughter swine and feeder pigs are barrows, gilts, sows, stags, and boars. Definitions of the respective classes are as follows:

BARROW—A barrow is a male swine castrated when young and before development of the secondary physical characteristics of a boar.

GILT—A gilt is a young female swine that has not produced young and has not reached an advanced stage of pregnancy.

SOW—A sow is a mature female swine that shows

evidence of having reproduced or has reached an advanced stage of pregnancy.

STAG—A stag is a male swine castrated after development or beginning of development of the secondary physical characteristics of a boar. Typical stags are somewhat coarse and lack balance—the head and shoulders are more fully developed than the hindquarter parts; bones and joints are large, the skin is thick and rough, and the hair is coarse.

BOAR—A boar is an uncastrated male swine.

The following are the *Official United States Standards for Grades of Slaughter Barrows and Gilts.* The photo captions are not part of the standards but are included as explanatory material.

APPLICATION OF STANDARDS FOR GRADES OF SLAUGHTER BARROWS AND GILTS

Grades of slaughter barrows and gilts are intended to be directly related to the grades of the carcasses they produce. To accomplish this, the slaughter barrow and gilt grades are predicated on the same two general considerations that provide the basis for the grades of barrow and gilt carcasses: (1) quality of the lean, and (2) expected combined carcass yields of the four lean cuts (ham, loin, picnic shoulder, and Boston butt).

Quality

With respect to quality, two general levels are considered: One for barrows and gilts with characteristics which indicate that the carcass lean will have acceptable quality and acceptable belly thickness and one for barrows and gilts with characteristics which indicate that the carcass lean will have unacceptable quality and/or the belly will be of unacceptable thickness. Since carcass indices of lean quality are not directly evident in barrows and gilts, some other factors in which differences can be noted must be used to evaluate quality. Therefore, the amount and distribution of external finish, firmness of fat, and firmness of lean are used as quality-indicating factors.

Barrows and gilts with characteristics which indicate that the carcass lean will have an unacceptable level of quality and/or the belly will be of unacceptable thickness are graded U.S. Utility. Also graded U.S. Utility—regardless of their development of other quality-indicating characteristics—are slaughter barrows and gilts with indications that their carcasses will be soft and oily.

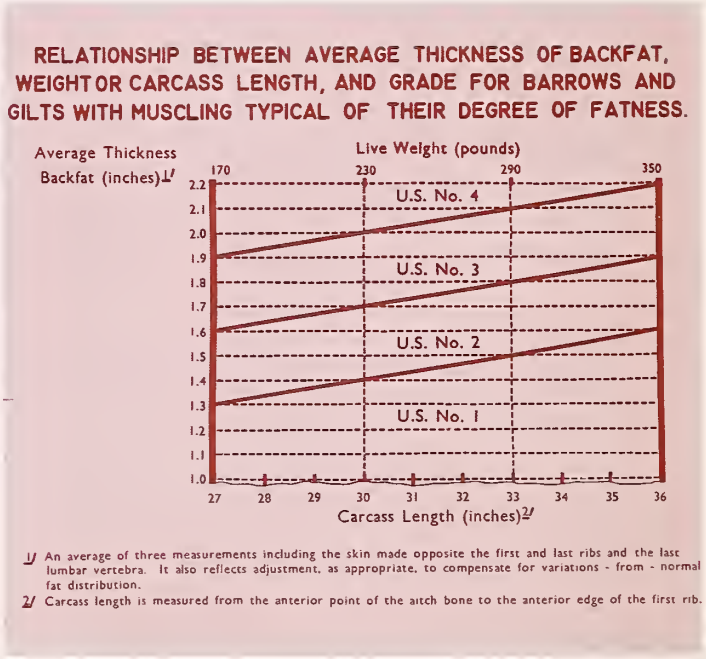
Yield

Four grades—U.S. No. 1, U.S. No. 2, U.S. No. 3, and U.S. No 4.—are provided for barrows and gilts with characteristics which indicate that the carcass lean will have an acceptable level of quality. These grades are based entirely on the expected combined carcass yields of the four lean cuts.

Average backfat thickness in relation to carcass length or live weight is used as a guide to expected yields of the four lean cuts in these standards. In grading barrows and gilts, these factors normally are appraised visually; live weight is the only one that can be readily determined in the live animal. The average backfat thickness appraisal includes consideration of the distribution of fat on other parts of the animal in addition to those points on the back where it is measured on the carcass.

Barrows and gilts will produce carcasses that vary in yields of four lean cuts because of variations in their degree of fatness (expressed as average thickness of backfat), and in their degree of muscling (thickness of muscling in relation to skeletal size). Since many slaughter swine have a normal development of muscl-

FIGURE 1



ing for their degree of fatness, in determining their grade the average thickness of backfat and carcass length or live weight are the only factors considered. These relationships are illustrated in Figure I for barrows and gilts weighing 170 to 350 pounds that will produce carcasses 27 to 36 inches long. For slaughter swine of other lengths or weights, average backfat thickness requirements for the various grades can be determined by an extension of the lines in this figure.

The degree of muscling specified for each of the four grades decreases progressively from the U.S. No. 1 grade through the U.S. No. 4 grade. This reflects the fact that among barrows and gilts of the same weight, the fatter animals normally have a lesser degree of muscling. For purposes of these standards six degrees of muscling are recognized: Very thick, thick, moderately thick, slightly thin, thin, and very thin. These degrees are intended to cover the entire range of muscling present among slaughter swine. The degrees specified as typical for barrows and gilts at the minimum of the U.S. No. 1, U.S. No. 2, U.S. No. 3, and U.S. No. 4 grades are, respectively: Thick, moderately thick, slightly thin, and thin.

For animals having a development of muscling which is different from that normally associated with their degree of fatness, the average backfat thickness-carcass length or average backfat thickness-live weight relationships for the various grades are different from those shown in Figure I. Consideration is given such unusual developments of muscling as follows: In each grade, superior muscling is permitted to compensate for greater fatness at the rate of one full degree of superior muscling for a one-tenth inch increase in average backfat. Except for the U.S. No. 1 grade, the reverse type of compensation is also permitted and at the same rate; one-tenth inch less fat compensates for a full degree of inferior muscling. In the U.S. No. 1 grade, this type of compensation is limited to one full degree of inferior muscling; barrows and gilts which have less than moderately thick muscling but which otherwise qualify for the U.S. No. 1 grade are graded U.S. No. 2. In no case, however, may variations-from-normal muscling alter the final grade more than one full grade.

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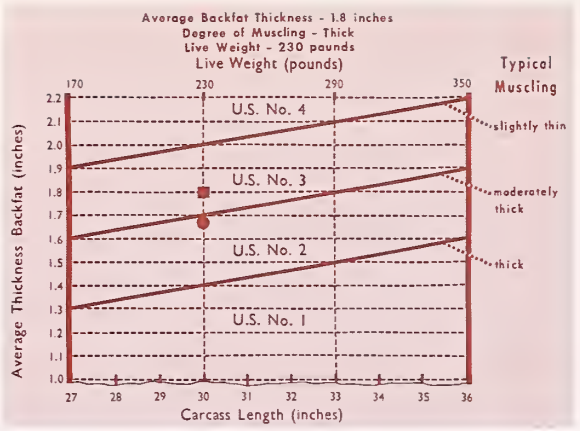


FIGURE 2

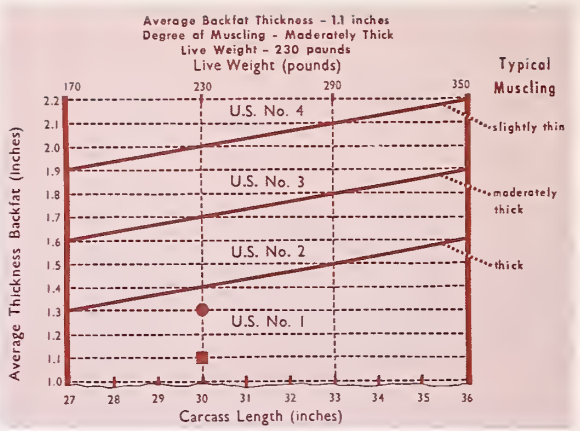


FIGURE 3

EXAMPLES OF COMPENSATIONS

Figures 2 and 3 illustrate the application of the compensations. Figure 2 describes a 230-pound slaughter hog with an average backfat thickness of 1.8 inches and thick muscling. On the basis of its weight and average backfat thickness this hog would be in the No. 3 grade as shown by the square in Figure 2. However, the thick muscling in this hog is slightly more than one degree superior to the minimum moderately thick muscling considered normal for such a hog. The slightly more than one degree of superior muscling compensates for slightly more than one-tenth inch greater fatness, and the grade would change to the point shown by the dot—in the U.S. No. 2 grade.

Figure 3 describes a 230-pound slaughter hog with an average backfat thickness of 1.1 inches and moderately thick muscling. On the basis of its weight and average backfat thickness, this hog would be in the No. 1 grade as shown by the square in Figure 3. However, because this hog has only moderately thick muscling—two degrees less than the very thick muscling associated with hogs of this weight and degree of fatness—an adjustment for this deficiency is required. Since, in these grade standards, one full degree of inferior muscling has the same effect on the yield of cuts as one-tenth inch additional fat, the grade would change to the point shown by the dot, but the hog would still grade U.S. No. 1. The standards require a U.S. No. 1 slaughter hog to have at least moderately thick muscling. Therefore, if this hog had less than moderately thick muscling, it would grade U.S. No. 2.

VISUAL EVALUATION

In evaluating barrows and gilts for fatness and muscling, variations in the degree of fatness have a greater effect on the yield of the lean cuts than do variations in muscling. The fatness and muscling evaluations can best be made simultaneously. This is accomplished by considering the development of the various parts based on an understanding of how the appearance of each part is affected by variations in muscling and fatness. While the muscling of most swine develops uniformly, the fat is normally deposited at a considerably faster rate on some parts than on others. Therefore, muscling can be appraised best by giving primary consideration to the parts least affected by fatness, such as the ham. Differences in thickness and fullness of the ham—with appropriate adjustments for the effects of variations in fatness—are the best indicators of the overall degree of muscling in slaughter barrows and gilts. Conversely, the overall fatness of barrows and gilts can be determined best by observing those parts on which fat is deposited at a faster-than-average rate. These include the edge of the loin, the rear flank, the shoulder, the jowls, and the belly. As swine increase in fatness, these parts appear progressively fuller, thicker, and more distended in relation to the thickness and fullness of the other parts, especially the thickness through the hams.

In thinly muscled swine with a low degree of fatness, the width of the back usually will be greater than the width through the center of the hams. The back on either side of the backbone will appear sloping and flat. Conversely, in thickly muscled swine with a similar degree of fatness, the thickness through the hams will be greater than through the back and the back will appear full and well rounded.

Very fat swine will be wider through the back than through the hams, but this difference will be greater in thinly muscled swine than in those that are thickly muscled. Such swine with thin muscling also will have a distinct break from the back into the sides while those with thick muscling will be nearly flat on top but will have a less distinct break into the sides.

As slaughter swine increase in fatness, they also become deeper bodied because of deposits of fat in the flanks and along the underline. The bulge of the flanks, best observed when the animal walks, and the thickness and fullness of the jowls are other indications of fatness.

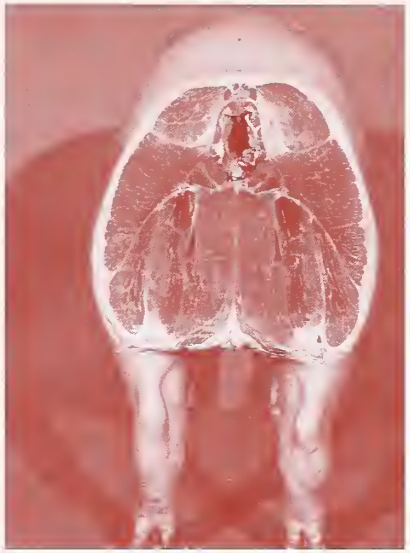


FIGURE 4

FIGURE 5

(Photos courtesy of Iowa State University)

When visually appraising a live hog one should keep in mind how the hog will look in carcass form. Here are the carcasses of two hogs frozen in an upright or standing position and then cross-sectioned at two places to show how the live hogs would have appeared. Hog A, Figure 4, weighed 233 pounds alive. Hog B, Figure 5, weighed 225 pounds alive. The first two photos show cross-sections at the bulge of the ham. Thickness through this region is largely due to muscle as is readily apparent when comparing Figures 4 and 5. Note that Hog A has much thicker and plumper muscles and a thinner fat covering, especially over the rump and in the twist. These are areas where fat is deposited at a faster than average rate.

Also note that although the ham of Hog B is thickly covered with fat, the overall outside appearance is one of flatness because of the flat muscling beneath the fat.

FIGURE 6

FIGURE 7

(Photos courtesy of Iowa State University)

Figures 6 and 7 were taken at the tenth rib where the loineye area is usually measured in the pork carcass. This is an area where fat is deposited at a relatively fast rate and where differences in both fatness and muscling are easily seen. It is obvious that Hog A has a much higher ratio of lean to fat but let's make a few actual comparisons:

	Hog A	Hog B
Live weight, pounds	233	225
Area of ribeye, square inches	6.6	3.90
Average backfat thickness, inches	0.8	1.7

Note also how much thicker all of the other muscles are on Hog A. Even though Hog A has about half as much fat as Hog B, the belly of Hog A is nearly as thick as that of Hog B. This thickness of belly was maintained by increasing the amount of muscling in this area while decreasing the fat.

Hog A was a "meat-type" hog. The carcass would have qualified for the U.S. No. 1 grade; Hog B's carcass would have qualified for the U.S. No. 3 grade.

Barrows and gilts qualifying for the U.S. No. 1, U.S. No. 2, U.S. No. 3, or U.S. No. 4 grade may vary with respect to the relative development of the individual grade factors. In fact, some will qualify for a particular grade although they have some characteristics more nearly typical of another grade. Because it is impractical to describe the nearly infinite number of such recognizable combinations of characteristics, the standards for each grade describe only barrows and gilts whose expected carcass yield of the four lean cuts is at the lower limit of each grade and which have a development of muscling that is normal for such swine.

Other factors such as heredity and management also may affect the development of the grade-determining characteristics in slaughter swine. Although these factors do not lend themselves to description in the standards, the use of factual information of this nature is justifiable in determining the grade of barrows and gilts. The ability to make proper allowances for the effects of genetic and management factors on the appearance of grade-determining characteristics must be developed through experience.

The illustrations of the slaughter swine grades are designed to show barrows that will have an expected carcass yield of the four lean cuts in the middle of each grade. Also, the illustrations were designed to show hogs of different weights in the various grades. In these illustrations the No. 1 barrow is the lightest, and No. 4 the heaviest. Under normal marketing conditions No. 4 hogs usually are heavier than No. 1's. Additionally, in the No. 3 and No. 4 grades some hogs will have more muscling than shown in the illustrations of these grades.

SPECIFICATIONS FOR OFFICIAL UNITED STATES STANDARDS FOR GRADES OF SLAUGHTER BARROWS AND GILTS

U.S. No. 1. Barrows and gilts in this grade will produce carcasses with acceptable lean quality and acceptable belly thickness and a high percentage of lean cuts. Swine near the borderline between the U.S. No. 1 and U.S. No. 2 grades are thickly muscled in the hams, loins, and shoulders. The width through the ham is nearly equal to the width through the shoulders and both are wider than the back. The back is slightly full, is well rounded, and blends smoothly into the sides. The sides are moderately long and smooth. The rear flank is slightly full and its depth is less than the depth of the fore flank. The jowls are firm and slightly thick and full.

A development of muscling superior to that spec-

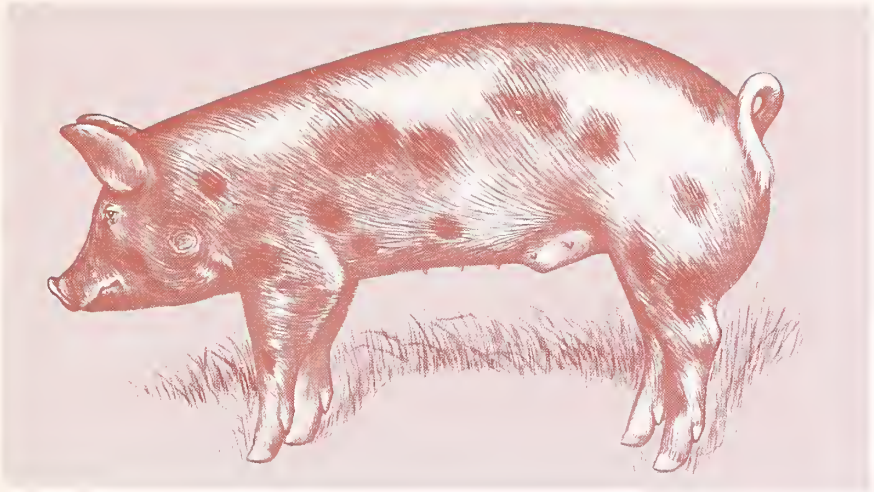


FIGURE 8

U.S. No. 1

The U.S. No. 1 grade barrow shown in Figure 8 has very thick muscling and an average backfat thickness of 1.2 inches. Notice in the rear view that the hams are wider than the loin and that the back is well rounded. Also, the lower parts of the hams are trim and appear firm. The legs are set wide apart due to the very thick muscling. From the side, he is trim in the middle and rear flank. The jowls are trim and appear firm.

ified as minimum for the U.S. No. 1 grade may compensate for a development of fatness which is greater than that indicated in Figure 1 as maximum for the U.S. No. 1 grade at the rate of one full degree of muscling for one-tenth of an inch greater thickness of backfat. For example, a barrow or gilt with very thick muscling may have one-tenth of an inch more backfat than that indicated in Figure 1 as maximum for this grade and remain eligible for the U.S. No. 1 grade. The

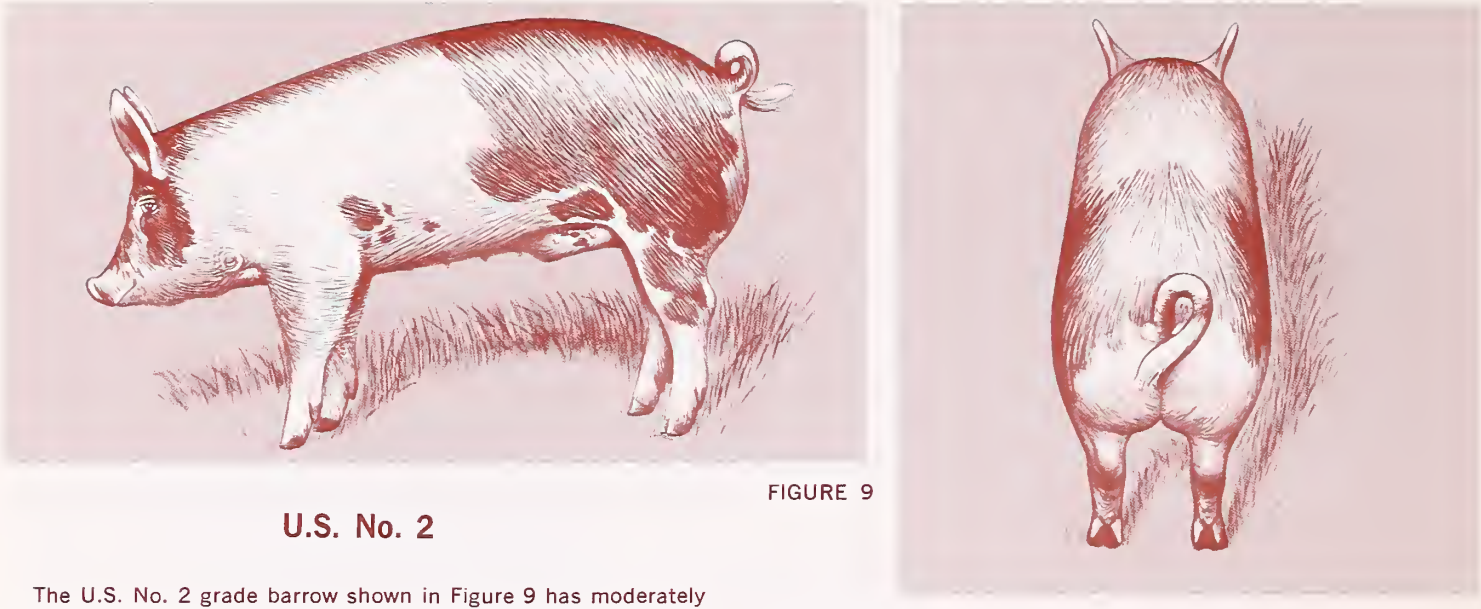


FIGURE 9

U.S. No. 2

The U.S. No. 2 grade barrow shown in Figure 9 has moderately thick muscling and an average backfat thickness of 1.6 inches. From the rear notice that the hams are somewhat wider than the loin but the loin is only slightly rounded and appears slightly fuller than the No. 1 barrow because of the presence of more fat covering. Also, there is some deposition of excess fat apparent over the lower parts of the hams. The legs are moderately wide-set. As seen from the side he is slightly deep in the middle. The jowl is beginning to show indications of excessive finish and the rear flank is moderately full.

reverse type of compensation is also permitted at the same rate—except that in no case may a barrow or gilt be graded U.S. No. 1 with less than moderately thick muscling.

U.S. No. 2. Slaughter barrows and gilts in this grade will produce carcasses with acceptable lean quality, acceptable belly thickness, and a slightly high percent-

age of lean cuts. Swine near the borderline between the U.S. No. 2 and U.S. No. 3 grades are moderately thickly muscled in the hams, loins, and shoulders. The width through the shoulders is slightly more than the width through the hams. The back is moderately full and is slightly rounded but with a slight break into the sides. The sides are slightly short and smooth. The rear flank is moderately full and its depth is slightly less than the depth of the fore flank. The jowls are moderately thick and full.

A development of muscling superior to that specified as minimum for the U.S. No. 3 grade may compensate for a development of fatness which is greater than that indicated in Figure 1 as maximum for the U.S. No. 3 grade at the rate of one full degree of muscling for one-tenth of an inch greater thickness of backfat. For example, a barrow or gilt with moderately thick muscling may have one-tenth of an inch more backfat than that indicated in Figure 1 as maximum for this grade and remain eligible for the U.S. No. 3 grade. The reverse type of compensation is also permitted at the same rate. For example, a barrow or gilt with thin muscling may have one-tenth of an inch less backfat than that indicated in Figure 1 as maximum for this grade and remain eligible for the U.S. No. 2 grade.

U.S. No. 3. Slaughter barrows and gilts in this grade will produce carcasses with acceptable lean quality and acceptable belly thickness and a slightly low percentage of four lean cuts. Swine near the borderline between the U.S. No. 3 and U.S. No. 4 grades are slightly thinly muscled in the hams, loins, and shoulders. The width through the shoulders is definitely greater than the width through the hams. The back is full and nearly flat with a pronounced break into the sides. The sides are short and smooth. The rear flank is full and its depth is equal to the depth of the fore flank. The jowls are thick and full.

A development of muscling superior to that specified as minimum for the U.S. No. 3 grade may compensate for a development of fatness which is greater than that

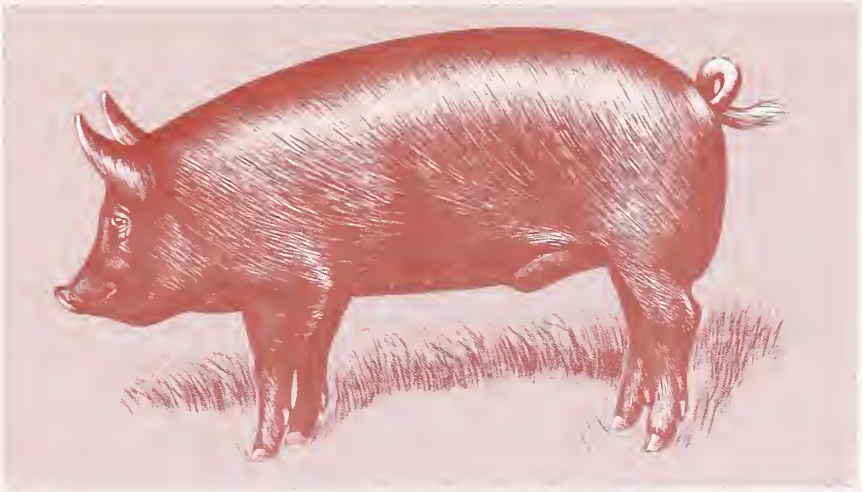


FIGURE 10

U.S. No. 3

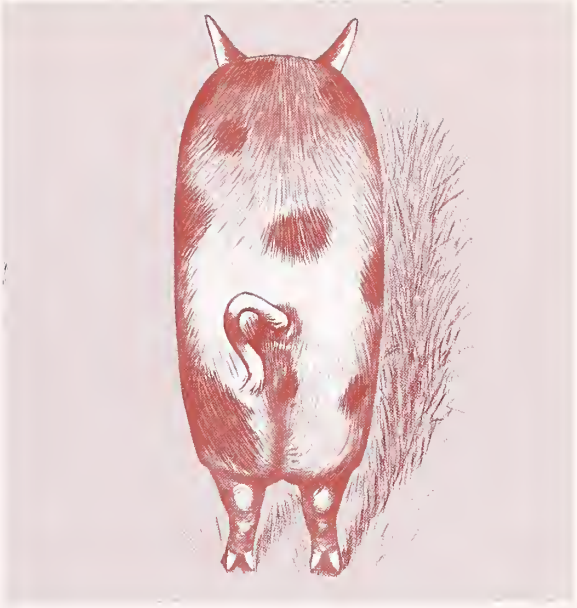
The U.S. No. 3 grade barrow shown in Figure 10 has slightly thin muscling and an average backfat thickness of 1.9 inches. Notice in the rear view that the hams are slightly flat and that his legs are set fairly close together, indicating slightly thin muscling. The back is nearly as thick as the hams and is uniform in width from front to rear. Also, the lower parts of the hams are filled with excess fat and appear slightly wasty. From the side he is deep in the middle. The rear flank is full and the jowl is thick and full.

indicated in Figure 1 as maximum for the U.S. No. 3 grade at the rate of one full degree of muscling for one-tenth of an inch greater thickness of backfat. For example, a barrow or gilt with moderately thick muscling may have one-tenth of an inch more backfat than that indicated in Figure 1 as maximum for this grade and remain eligible for the U.S. No. 3 grade. The reverse type of compensation is also permitted at the

FIGURE 11

U.S. No. 4

The U.S. No. 4 grade barrow shown in Figure 11 has thin muscling and an excessive amount of fat covering—an average backfat thickness of 2.2 inches. From the rear he is wider over the loin than the hams and his legs are set very close together because of the lack of muscling in the hams. Notice that the top of the back is flat. He is very wasty in the lower parts of the hams as indicated by the crease between the hams and the crease just above the hocks. As viewed from the side, this barrow is very deep in the middle with noticeable wrinkling on the side just behind the shoulder. The rear flank is distended and very full and the jowl is very thick and full.



same rate. For example, a barrow or gilt with thin muscling may have one-tenth of an inch less backfat than that indicated in Figure 1 as maximum for this grade and remain eligible for the U.S. No. 3 grade.

U.S. No. 4. Barrows and gilts in this grade will produce carcasses with acceptable lean quality and acceptable belly thickness. However, they are fatter and

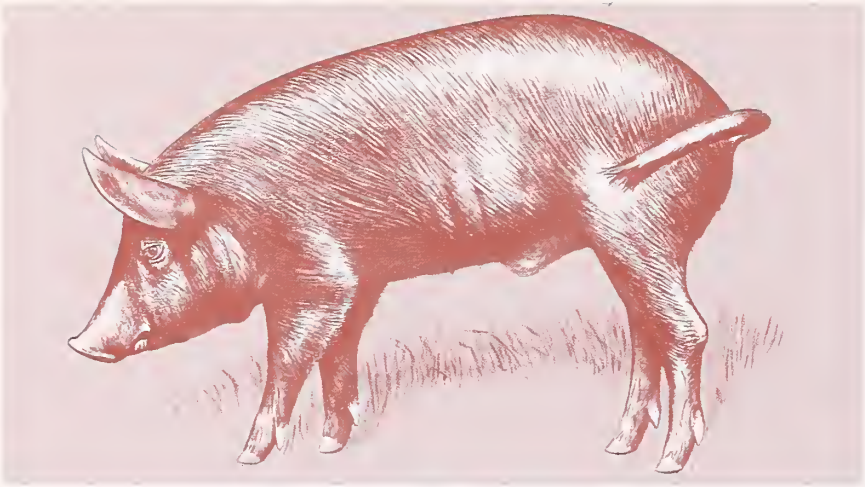


FIGURE 12

U.S. Utility

The U.S. Utility barrow shown in Figure 12 will produce a carcass with unacceptable quality and a belly too thin to produce desirable bacon. He has a thin covering of fat as indicated by his shallow, thin flank and the wrinkles along the lower part of his side. From the rear this is shown by the thin loin and the tapering hams. These characteristics are typical of this grade.

less muscular and will have a lower carcass yield of the four lean cuts than those in the U.S. No. 3 grade.

U.S. Utility. Barrows and gilts typical of this grade will have a thin covering of fat. The sides are wrinkled and the flanks are shallow and thin. Barrows and gilts in this grade will produce carcasses with unacceptable lean quality and/or unacceptable belly thickness.

The following are the *Official United States Standards for Grades of Feeder Pigs*. The photo captions are not part of the standards but are included as explanatory material.

APPLICATION OF STANDARDS FOR GRADES OF FEEDER PIGS

The grade of a feeder pig is determined by evaluating two general value-determining characteristics—its logical slaughter potential and its thriftiness.

The logical slaughter potential of a thrifty feeder pig is its expected slaughter grade at a market weight of 220 pounds after a normal feeding period. In these feeder pig standards, logical slaughter potential is determined by a composite appraisal of the development of the muscular system and the skeletal system. Both of these factors have an important effect on the development of lean and fat as the animal grows and fattens, and therefore, on the expected slaughter and carcass grade.

Thriftiness in a feeder pig is its apparent ability to gain weight rapidly and efficiently. Size for age, health, and other general indications of thriftiness are considered in appraising the thriftiness of feeder pigs.

The standards provide for six grades of feeder pigs—U.S. No. 1, U.S. No. 2, U.S. No. 3, U.S. No. 4, U.S. Utility, and U.S. Cull. Except for the U.S. Cull grade, these names correspond to the five grade names for slaughter swine and pork carcasses. The U.S. No. 1, U.S. No. 2, U.S. No. 3, and U.S. No. 4 grades include all pigs which are thrifty. Differentiation between the U.S. No. 1, U.S. No. 2, U.S. No. 3, and U.S. No. 4 grades is based entirely on differences in logical slaughter potential. Feeder pigs in the U.S. No. 1 grade have sufficient muscling and frame to reach a market weight of 220 pounds with a minimum degree of finish. Feeder pigs in the U.S. No. 2, U.S. No. 3, and U.S. No. 4 grades usually have progressively less muscling and less frame and are expected to have progressively more finish when marketed at 220 pounds. The U.S. Utility and U.S. Cull grades include only pigs which lack thriftiness. Differentiation between the U.S. Utility and U.S. Cull grades is based entirely on differences in thriftiness.

Most feeder pigs are marketed when relatively young and before reaching a weight of 125 pounds. At this age, sex condition exerts little influence on the basic factors determining the feeder grade. Therefore, these standards are equally applicable for grading barrow, gilt, and boar pigs, although it is recognized that sex condition may influence the market price in some instances. It is assumed that boar pigs will be castrated prior to developing the secondary physical characteristics of a boar. Sows, stags, and mature boars are seldom used as feeder animals, and these standards do not apply to those classes.

Only one combination of muscling and skeletal characteristics is described in the standards for the U.S. No. 1, U.S. No. 2, U.S. No. 3, and U.S. No. 4 grades. However, feeder pigs qualifying for the U.S. No. 1, U.S. No. 2, U.S. No. 3, or U.S. No. 4 grades may vary with respect to the relative development of the individual grade factors. In fact, some will qualify for a particular grade although they have some characteristics more nearly typical of another grade, except that feeder pigs in the U.S. No. 1 grade must have at least moderately thick muscling. Feeder pigs with other characteristics of the U.S. No. 1 grade, but with less than moderately thick muscling would be in the U.S. No. 2 grade. Since no attempt is made to describe the numerous combinations of characteristics that may qualify a feeder pig for a specific grade, making appropriate compensations for varying combinations of characteristics requires the use of sound judgment.

SPECIFICATIONS FOR OFFICIAL UNITED STATES STANDARDS FOR GRADES OF FEEDER PIGS

U.S. No. 1. Feeder pigs in this grade near the borderline of the U.S. No. 2 grade are long and have thick muscling throughout. Thickness of muscling is particularly evident in thick and full hams and shoulders.

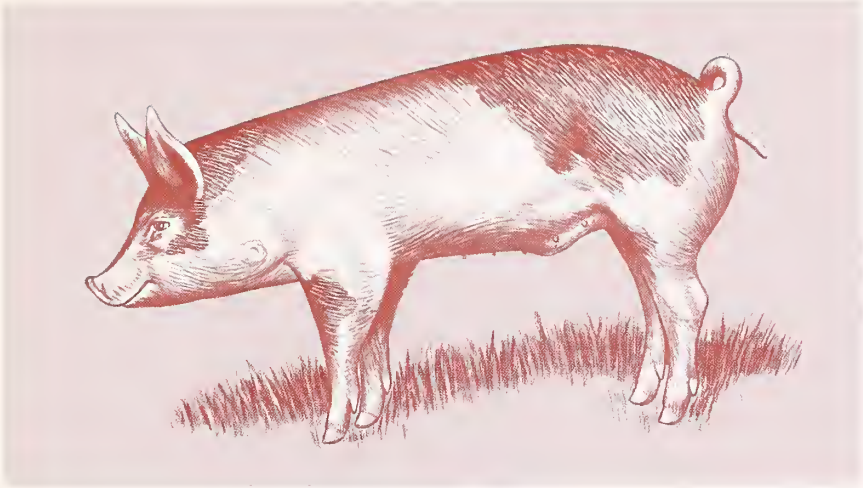


FIGURE 13

U.S. No. 1

This U.S. No. 1 grade feeder pig shown in Figure 13 has very thick muscling and a large frame which will allow him to reach 220 pounds with a low degree of fatness. Notice from the rear that the legs are set wide apart due to the very thick muscling. Also note that the hams are wider than the loin. From the side he is trim throughout and he will have a high degree of trimness even at market weight.

The hams and shoulders are thicker than the back, which is well rounded. They usually present a well-balanced appearance. In no case may a feeder pig be graded U.S. No. 1 with less than moderately thick muscling. Feeder pigs in this grade are expected to produce U.S. No. 1 grade carcasses when slaughtered at 220 pounds.

U.S. No. 2. Feeder pigs in this grade near the borderline of the U.S. No. 3 grade are moderately long and have moderately thick muscling throughout. Thickness of muscling is particularly evident in moderately thick and full hams and shoulders. The back usually appears

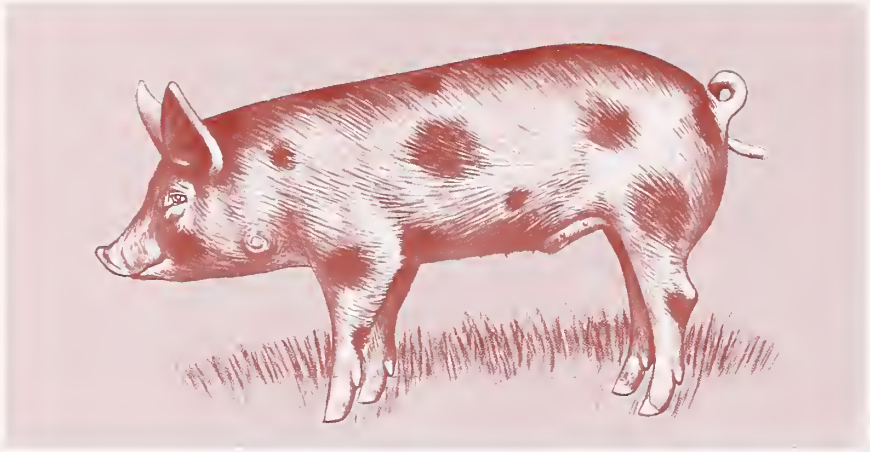


FIGURE 14

U.S. No. 2

This U.S. No. 2 grade feeder pig shown in Figure 14 has moderately thick muscling and a moderately large frame. He should reach 220 pounds with only a moderate degree of fatness. As viewed from the rear the hams are slightly wider than the loin. The legs are moderately wide-set indicating moderately thick muscling. From the side he has begun to lose the look of trimness shown by the No. 1 barrow in that the jowl and flank are beginning to fill with fat.

slightly full and well-rounded. They usually present a well-balanced appearance. This grade also includes feeder pigs which otherwise qualify for the U.S. No. 1 grade but have less than moderately thick muscling. Feeder pigs in this grade are expected to produce U.S. No. 2 grade carcasses when slaughtered at 220 pounds.

U.S. No. 3. Feeder pigs in this grade near the borderline of the U.S. No. 4 grade are slightly short and have slightly thin muscling throughout. The hams and shoulders are slightly thin and flat and the back usually appears moderately full and thick. Feeder pigs in this

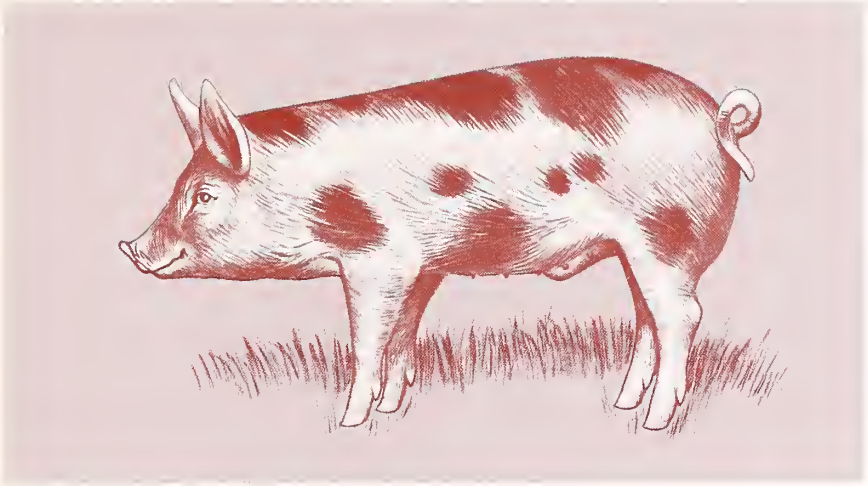


FIGURE 15

U.S. No. 3

This U.S. No. 3 grade feeder pig shown in Figure 15 has slightly thin muscling and a slightly small frame. When he reaches 220 pounds he will have a high degree of fatness. From the rear he looks relatively uniform in width through the hams and loin due to the low degree of muscling and relatively high degree of fatness. And due to his slightly thin muscling, the legs are set fairly close together. When viewed from the side he shows definite signs of fat already being deposited in the jowl and flank.

grade are expected to produce U.S. No. 3 grade carcasses when slaughtered at 220 pounds.

U.S. No. 4. Feeder pigs typical of the U.S. No. 4 grade are short and have thin muscling throughout. The hams are thin and rather flat, particularly in the lower parts toward the shanks. The back usually appears slightly flat and the width at the topline usually is greater than at the underline. Feeder pigs in this grade are expected to produce U.S. No. 4 grade carcasses when slaughtered at 220 pounds.

U.S. Utility. Feeder pigs typical of this grade are

FIGURE 16

U.S. No. 4

This U.S. No. 4 grade feeder pig shown in Figure 16 has thin muscling and a small frame. At 220 pounds he will have a very high degree of fatness. From the rear he is uniform in width through the hams and loins and the back is rather flat. Also, the legs are set close together due to the thin muscling. Even at this size, from the side he is beginning to look wasty throughout. The jowl and flank are moderately full. Also, the lower parts of the hams are beginning to fill with fat.

small for their age and appear unthrifty. They often have a rough, unkempt appearance indicating the effects of disease or poor care. The hams and shoulders usually are thin and flat and taper toward the shanks. The back is thin and lacks fullness. Pigs in this grade near the borderline of the U.S. No. 1, U.S. No. 2, U.S. No. 3, and U.S. No. 4 grades are slightly small for their age and appear slightly unthrifty. It is recognized that U.S. Utility grade feeder pigs will produce U.S. No. 1, U.S. No. 2, U.S. No. 3, or U.S. No. 4 grade carcasses when slaughtered at 220 pounds provided their un-

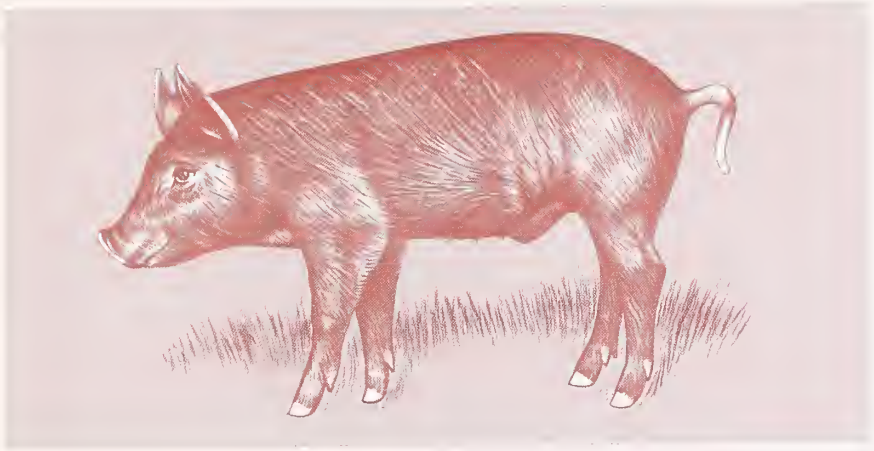


FIGURE 17

U.S. Utility

This U.S. Utility grade feeder pig shown in Figure 17 is unthrifty due to disease or poor care. However, his unthrifty condition is not so serious that he could not recover with proper care and treatment. Notice the wrinkled skin, rough unkempt appearance, and the head which appears larger than normal. These are typical characteristics of pigs in this grade. If their unthrifty condition is corrected, pigs in this grade may become a No. 1, 2, 3, or 4 at 220 pounds. Cull feeder pigs, although not illustrated, will be less thrifty and will require a long and costly feeding period to reach market weight.

thrifty condition is corrected. U.S. Utility grade feeder pigs whose unthrifty condition is not corrected will produce U.S. Utility grade carcasses.

U.S. Cull. Feeder pigs typical of this grade are very deficient in thriftiness because of poor care or disease. They can be expected to reach a normal market weight only after an extremely long and costly feeding period, if at all.

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